

CAVE CREEK AT SPUR CROSS ROAD

FCD GAGE ID# 4923

USGS GAGE ID# 09512280

STATION DESCRIPTION

LOCATION – The gage location is approximately five miles north of Carefree Highway and about 3.5 miles north of the town of Cave Creek. The gage located on the left bank of the natural channel approximately 1,500 feet downstream of Cottonwood Creek. Latitude N 33° 53' 14", Longitude W 111° 57' 12". Located in the SE1/4 SE1/4 SW1/4 S04 T6N R4E in the Cave Creek 7.5-minute quadrangle.

ESTABLISHMENT – The USGS began gaging in Water Year 1981. The District began gaging on June 16, 1993.

DRAINAGE AREA – 82.7 mi²

GAGE – The FCD gage is a non-submersible pressure transducer interfaced with the USGS bubbler orifice. The orifice elevation is at 2.37 feet gage height, made effective as of October 1, 2006. Orifice was found at this elevation during annual site visit of May 11, 2009.

There are several staff gages at this site. Essentially, the staff gage range is zero to 16 feet. The gage is divided into several sections. The gage reads in gage height.

There is one crest gage at this location maintained by the USGS. The pin elevation of the crest gage is 4.48 feet gage height.

ZERO GAGE HEIGHT - Zero is believed to be defined as the zero on the staff gage.

HISTORY – The USGS began gaging in Water Year 1981. USGS shifted gage datum by +2.0 feet at an undetermined time. FCD installed a PT on June 16, 1993. On February 15, 1995 the PT was removed and interfaced with the USGS bubbler line. The gage house was moved in February 2000 at the request of the landowner. The orifice line remained at the same location. The gage house was moved approximately 500 feet north of its previous location. A transmitter was set up at the orifice to a receiver at the gage house.

REFERENCE MARKS – The USGS established the following marks. Some marks may have been destroyed or the 'reference from the shelter' is no longer valid due to move of shelter in March 2000.

RM1 is a chiseled square on top northwest corner of stone block and is 17.3 feet streamward, 10 feet downstream from centerline of shelter (prior to move). Elevation 20.217 feet gage height, levels of July 27, 1995.

RM2 is the top of a cut off rebar (flush with ground – painted red) with a chiseled 'X' on top. Location is 10.6 feet downstream from the center of the front of shelter (prior to move). Elevation 19.181 feet gage height, levels of July 27, 1995.

RM6 is a bolt in the rock holding the lower outside staff bracket five feet downstream from the orifice (closest bolt to the bank – painted red.) Elevation 7.034 feet gage height, levels of July 27, 1995.

RM7 is a bolt in a large boulder 15 feet upstream from the orifice, near the upper outside staff (painted red.) Elevation 7.044 feet gage height, levels of July 27, 1995.

A rebar reference was installed on August 11, 2003. The rebar is about 20 feet south of the large station housing. It has not been tied to gage height. Elevation 2,287.56 feet NAVD 1988. State Plane coordinates are N 1050564.491, E 688798.748.

CHANNEL AND CONTROL – The channel is straight 300 feet upstream and 200 feet downstream from the gage. The left bank is approximately 20 feet high and is nearly vertical at gage. It is composed of silt and a large number of boulders and cobbles. The right bank is 5 – 7 feet high with vegetation consisting of Palo Verde trees, mesquite trees, heavy Johnson grass, and a few small cactuses. It is subject to overflow during high flows. The low flow control is a small cobble riffle about 50 feet below gage and is subject to shitting. The medium and high water control is the channel.

RATING – The current rating is USGS Rating #9, developed following a large peak from September 2005.

DISCHARGE MEASUREMENTS – Wading measurements can be made 65 feet below the gage at a maximum gage height of 3.0 feet. High water measurements are made from the cableway 70 feet downstream from the gage. The cableway is a 3/4-inch galvanized steel wire rope having a 189 foot span. The cable has width markings at five-foot intervals with the initial point at the left pull point. A slope area reach is located at the gage.

POINT OF ZERO FLOW – The PZF is at 2.35 feet gage height, levels from WY2005.

FLOODS – A flood of 9,200 cfs at 15.24 feet gage height occurred on January 8, 1993. A flood of about 14,000 cfs and 16.4 feet gage height occurred on September 3, 2005.

REGULATION – None known

DIVERSIONS – None known

ACCURACY – Fair

JUSTIFICATION – Monitor flows in Cave Creek above several large washes entering downstream for comparison with gage approximately three miles downstream. Monitor flows into Cave Buttes Dam.

UPDATE – July 13, 2011
 D E Gardner